

Attachment 4: Project Description

The proposed project is located within the Arlington portion of the Riverside-Arlington Groundwater Basin in Riverside County, California (California Department of Water Resources Bulletin 118 Basin No. 8-2.03). The Arlington Basin is separated from the Riverside Basin to the northeast by a groundwater flow divide that is generally correlative with Adams Street. This boundary also serves as the political boundary that separates the unadjudicated Arlington Basin from the adjudicated Riverside Basin. Groundwater within the Arlington Basin flows in a southwesterly direction and discharges into the adjacent Temescal Basin to the southwest.

Western is contemplating various alternatives to expand the Arlington Desalter production to meet future water demand. Western is concerned that expansion of the Arlington Desalter will cause excessive drawdown of groundwater levels leading to reduce yields at the existing desalter wells and subsequently reduced production at the desalter. Western is also concerned about drawdown impacts on other producers within Arlington Basin and neighboring basins including Riverside and Temescal.

Western developed Arlington Basin Numerical Groundwater Flow Model to investigate the impacts of increasing groundwater production on groundwater levels in the Basin. Predictive analysis of future pumping within the Arlington Basin using a groundwater flow model has indicated that planned production is not sustainable on a long-term basis. In order to increase groundwater production, it will be necessary to:

1. Distribute new production in other areas of the Arlington Basin, particularly in the eastern portion of the basin away from existing desalter wells; and
2. Identify areas for artificial recharge to help sustain groundwater production.

There are two projects included in this Application. The first project is construction of three monitoring wells and the second project is assessing the feasibility of artificial recharge at potential recharge basin site. Both projects are located in the Arlington Basin, Riverside County, California. The main goal of the project is to operate the groundwater basin in a sustainable manner for reliable supply for beneficial. The specific objectives of the project are to monitor groundwater levels along the boundaries of the adjudicated Riverside Basin and Temescal Basin, quantify underflow water volumes from southeast portion of the Basin to the Arlington Desalter wells by monitoring water levels, and to reduce declining of the Arlington groundwater levels through artificial groundwater recharge. Western plans to form an Advisory Committee which will include all stakeholders in the Basin. The Advisory Committee will discuss major water resource issues including water volumes and quality of the Basin, plans to reduce groundwater production and increase artificial water recharge, financial funding opportunities among stakeholders for recharge projects, and other issues. It is anticipated that the Advisory Committee meeting will be held twice a year, every six months. The meetings minutes of the Advisory Committee and other documents will be posted online at Western's homepage (www.wmwd.com). The monitoring wells along the boundaries of the Basin and the recharge basin will be maintained by Western Municipal Water District through the annual operations and maintenance budget.

Below are detailed descriptions each project:

Project 1 – Construction of Three Monitoring Wells in the Arlington Groundwater Basin – Riverside County, California

The goal of this project is to locate, design and construct three monitoring wells at key locations within the Arlington Basin. The monitoring wells would enable the collection of groundwater level data necessary to manage future groundwater pumping and recharge within the basin in accordance with the Arlington Groundwater Management Plan. Three preliminary monitoring well locations have been identified as shown on attachment 2 of 2 for Attachment 4:

- MW-1 would be located on Riverside County Flood Control and Conservation District (RCFCCD) land in the northeast portion of the Arlington Basin near the boundary with the Riverside Basin. The purpose of this well would be to enable the collection of groundwater level data for basin management decisions as they relate to impacts of groundwater pumping in the Arlington Basin on groundwater levels and flow in the Riverside Basin, which is adjudicated.
- MW-2 would be located on RCFCCD land in the central portion of the Arlington Basin. This well would enable the collection of groundwater level data for monitoring the impacts of future pumping and recharge in the upgradient portions of the basin on groundwater levels at the existing Arlington Desalter Wells.
- MW-3 would be located on RCFCCD land in the southwest portion of the Arlington Basin near the boundary with the Temescal Basin. The purpose of this well would be to monitor the impacts of groundwater pumping and recharge in Arlington Basin on groundwater levels and flow in the downgradient Temescal Basin.

Proposed monitoring wells would be constructed of 4-inch diameter PVC blank casing and slotted screen using a hollow-stem auger drilling rig. For planning purposes, each well would be constructed to a total depth of 75 ft below ground surface (bgs) and perforated within the upper portion of the aquifer system. Upon completion, each monitoring well would be developed in order to remove suspended sediment from the well.

Project 2 – Recharge Pilot Testing at Gibson Basin – Riverside County, California

The goal of this project is to assess the feasibility of artificial recharge at one potential recharge basin site within the Arlington Basin. The Gibson Site consists of an approximate 1,200 ft by 150 ft strip of private property located on the northeast corner of Gibson Street and Lincoln Avenue (33° 54' 42.4646", -117° 26' 01.5038"). Please see attachment 2 of 2 for Attachment 4 for the location of the project. Previous testing at the site has shown that the subsurface sediments should facilitate artificial recharge. However, it is necessary to verify the infiltration rate and potential mounding beneath the site.

Western is conducting studies to support expansion of the Arlington Desalter system in the Arlington Groundwater Basin. Localized pumping has resulted in groundwater level declines around the desalter wells. Western is evaluating options to mitigate the groundwater level declines by re-distribution of pumping and development of projects to replenish the Arlington groundwater basin. Western has identified sites in the Arlington Basin where a potential artificial recharge could be implemented to enhance groundwater recharge. Western has retained Todd Engineers Consultant to conduct a hydrogeological investigation for five sites including Gibson basin to evaluate the recharge potential of these sites. The results of the hydrogeological investigation indicated that Gibson basin contains favorable geology and the infiltration rates are more than 4 feet per day which indicate favorable conditions for artificial groundwater recharge. It is recommended to conduct long-term pilot percolation test for the Gibson basin to better define recharge potential.

In order to verify the infiltration rates and groundwater mounding, it is proposed to conduct a pilot recharge test at the Gibson site. The recharge test would consist of discharging water within an approximate 90 ft by 90 ft recharge basin for approximately one month. Discharge into the basin and groundwater levels would be closely monitored to determine infiltration rates. One monitoring well would be constructed at the site in order to monitor groundwater level changes associated with the recharge. The source of water for the test would be potable water from a nearby fire hydrant.